

REMARKS

Claims 1 to 22 are pending in the application. Claims 21 and 22 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing particularly to point out and distinctly to claim the subject matter that Applicant regards as the invention. Claims 1, 2, 4, 8, 12 to 14, 16, 21, and 22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Takazawa et al. (U.S. Patent 5,279,655). Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Takazawa et al. in view of Nishizaki et al. (U.S. Patent 6,022,910). Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Takazawa et al. in view of Tobias (U.S. Patent 5,286,288). Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Takazawa et al. in view of Ball (U.S. Patent 4,684,956). Claims 10 and 11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Takazawa et al. in view of Yaegashi et al. (U.S. Patent 5,270,730), Wickramanayake (U.S. Patent 5,531,816), Malhotra et al. '117 (U.S. Patent 5,922,117), and Breton et al. (U.S. Patent 6,106,599). Claim 15 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Takazawa et al. in view of Shawcross et al. (U.S. Patent 6,028,180) and Bruder et al. (U.S. Patent 5,015,292). Claim 17 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Takazawa et al. in view of JP 06 228 476, Yaegashi et al., and Malhotra et al. '390 (U.S. Patent 5,902,390). Claims 1 to 5, 7 to 9, 13, and 18 to 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Breton et al. (U.S. Patent 6,045,607) in view of Takazawa et al., Ball, and Fujioka (U.S. Patent 5,397,388). Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Breton et

al. in view of Takazawa et al., Ball, and Fujioka and further in view of Tobias et al. Claims 10 to 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Breton et al. in view of Takazawa et al., Ball, and Fujioka and further in view of Yaegashi et al., Wickramanayake, Malhotra et al. '117, and Breton et al. Claims 16 and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Breton et al. in view of Takazawa et al., Ball, and Fujioka and further in view of JP 06228476, Yaegashi et al., and Malhotra et al. '390.

With respect to the rejection of claims 21 and 22 under §112, second paragraph, the Examiner has stated that claim 21, which contains "consisting essentially of" language, and claim 22, which contains "consisting of" language, given this closed language, the scope of the claims is confusing given the presence of "optional" components, and has requested clarification. Applicant points out that the "consisting essentially of" language in a claim limits the scope thereof to the elements expressly recited and to only those additional unspecified elements that do not materially affect the basic and novel characteristics of the claimed combination. See, e.g., Ex parte Davis, 80 U.S.P.Q. 448 (PTO Bd. App 1950); In re Baird, 348 F.2d 974, 146 U.S.P.Q. 579 (CCPA 1965); In re Bandel, 348 F.2d 563, 146 U.S.P.Q. 389 (CCPA 1965); In re Janakirama-Rao, 317 F.2d 951, 137 U.S.P.Q. 893 (CCPA 1963); Atlas Powder Co. v. E.I. du Pont De Nemours and Co., 750 F.2d 1569, 224 U.S.P.Q. 409 (Fed. Cir. 1984); Ex parte Hoffman, 12 U.S.P.Q.2d 1061 (PTO Bd. App. 1989); In re Garnero, 412 F.2d 276, 162 U.S.P.Q. 221 (CCPA 1969). Applicant further points out that the use of the term "optionally" in a claim with respect to the presence of a material denotes that a given

material may or may not be employed, and does not obfuscate the subject matter claimed as the invention. "Optionally" is akin to expressions such as "up to" and "0 to . . ." and would not normally render claims indefinite. Ex parte Cordova, 10 U.S.P.Q. 2d 1949 (PTO Bd. Pat. App. Int. 1989). As the Board of Appeals stated in Ex parte Cordova, "(t)he examiner contends that the use of the term 'optionally' is ambiguous, since it is not clear whether the unsaturated aliphatic carboxylic acid is, in fact, encompassed by the claims. The recitation 'optionally' denotes that the unsaturated aliphatic carboxylic acid may or may not be employed. It is not apparent, and the examiner has not explained, why the use of such alternative language fails to particularly point out and distinctly claim the subject matter appellants regard as their invention. It is our opinion that the use of the alternative expression 'optionally' in the rejected claims does not obfuscate the subject matter appellants regard as their invention. Ex parte Head, 214 U.S.P.Q. 551 (Bd. App. 1981). The examiner's rejection under the second paragraph of 35 U.S.C. 112 is, therefore, reversed." Ibid. at 1950. See also Ex parte Wu, 10 U.S.P.Q. 2d 2031 (BPAI 1989), upholding the use of the word "optionally" in a "consisting of" claim. Applicant is of the position that the claims reciting "consisting essentially of" and "consisting of" are clear to one of ordinary skill in the art; the composition thus defined is determined in accordance with normal construction of the "consisting essentially of" and "consisting of" language, and the optional components either may or may not be present. Applicant accordingly respectfully requests reconsideration and withdrawal of this ground for rejection.

Applicant continues to traverse the rejections of the claims under §103 for the reasons set forth in the previous Amendment.

In response to Applicant's position as set forth in the previous Amendment to the effect that Takazawa et al. discloses the use of a viscosity modifier in a liquid ink but not in a solid ink, the Examiner has stated that Takazawa et al. teaches at column 7, lines 65 to 68 that in the solid ink conventional vehicles and others can be used without any particular change, that it is the Examiner's position that conventional vehicles and others encompasses such vehicles as those disclosed in column 6, lines 43 to 53 of the reference wherein the disclosed vehicle includes a viscosity modifier, and that there is no disclosure in the reference that viscosity modifiers are excluded from the solid ink. Applicant disagrees with this position. The reference clearly states at column 7, lines 56 and 57, that "(h)ereinafter, the solid ink composition of the present invention will be explained." (emphasis added) At column 7, lines 65 to 68, the reference states that "(w)ith respect to the solid ink for such uses, conventional vehicles and others can be used without any particular change except that the specified coloring agent as mentioned above is used as the coloring agent." Immediately thereafter, in column 8, lines 1 to 23, the reference states: "Hereinafter, a first explanation will be given for the one-time thermal transfer ink ribbon. The vehicle of solid ink for the ribbon is preferably a vehicle composed of a wax-like substance as a main component or a vehicle composed of a mixture of a wax-like substance and a thermoplastic resin as a main component. Examples of the wax-like substance include natural waxes such as carnauba wax, whale wax, haze wax, bees wax, lanolin, montan

wax and ceresine wax; petroleum waxes such as paraffin wax and microcrystalline wax; synthetic waxes such as low molecular weight polyethylene, oxidized wax and ester wax; higher fatty acids such as lauric acid, myristic acid, palmitic acid, stearic acid and behenic acid; higher aliphatic alcohols such as stearyl alcohol and behenyl alcohol; esters such as higher fatty acid monoglycerides, sucrose fatty acid esters and sorbitan fatty acid esters; and amides such as oleic amide. One or more kinds of these wax-like substances are appropriately used. Examples of the thermoplastic resin include ethylene-vinyl acetate copolymer, petroleum resin, polyvinyl acetate, polystyrene, styrene-butadiene copolymer and acrylic resin. One or more kinds of these resins are appropriately used." (emphasis added) Subsequent portions of the reference discuss inks for use in multi-use thermal transfer ribbons, one-time use pressure-sensitive ribbons, and multi-use pressure-sensitive ribbons. The statement at the bottom of column 7 to the effect that "conventional vehicles and others can be used without any particular change except that the specified coloring agent as mentioned above is used as the coloring agent" clearly refers to conventional vehicles commonly used in one-time use and multi-use thermal transfer and pressure-sensitive transfer ribbons, as discussed at the top of column 8 and subsequent portions of the reference, and does not refer to conventional vehicles commonly used in liquid inks, which were discussed previously in the reference.

In response to Applicant's position as set forth in the previous Amendment to the effect that Takazawa et al. does not disclose the time necessary for the ink to change from solid state to liquid

state, the Examiner has stated that while it is agreed that the reference does not explicitly disclose the time required for the ink to change from the solid state to the liquid state, Takazawa et al. does disclose the melting point of the ink, that to the extent that the melting point represents the change from solid to liquid, and given that the melting temperature and the ink ingredients disclosed by Takazawa et al. overlap those presently claimed, it is the Examiner's position that the ink of Takazawa et al. would intrinsically change from solid to liquid in the same time as presently claimed, and that Takazawa et al. therefore remains a relevant reference against the present claims. Applicant disagrees with this position. As stated hereinabove and in the previous Amendment, Takazawa et al. fails to teach or suggest a hot melt or phase change ink of the composition recited in the instant claims. In addition, while melting point is measured in units of temperature, such as degrees, the time required for a material to undergo a change from the solid state to the liquid state is measured in units of time, such as milliseconds. Two materials with the same melting point can have substantially different melt times. Accordingly, since Takazawa et al. fails to teach either a composition as recited in the instant claims or a hot melt or phase change ink with a melt time as recited in claim 4, Applicant remains of the position that the present invention as recited in the instant claims is patentable with respect to the teachings of this reference, viewed either alone or in combination with other references.

In response to Applicant's position as set forth in the previous Amendment to the effect that Takazawa et al. viewed in combination with Tobias et al. would not lead one of ordinary skill in the

art to the present invention, the Examiner has stated that given that Tobias et al. is drawn to hot melt inks as are Takazawa et al. and the present claims, and further given that Tobias et al. teaches that conductivity agents are used in hot melt inks to control the conductivity of the ink to a certain level to produce an ink which is suitable for use in an ink jet printer, a function especially relevant to both Takazawa et al. and the invention at hand, it is the Examiner's position that there is ample motivation to combine Takazawa et al. with Tobias et al. and thereby arrive at the claimed invention. Applicant disagrees with this position. As stated hereinabove, Takazawa et al. does not teach or suggest a hot melt or phase change ink of the composition recited in the instant claims; Tobias et al. fails to remedy this deficiency in the teachings of Takazawa et al. In addition, Takazawa et al. teaches solid inks for use in thermal transfer ribbons and pressure-sensitive transfer ribbons, while Tobias et al. teaches hot melt inks for use in continuous ink jet printing. The conductivity of the ink is very important in continuous ink jet printing, but nothing in Takazawa et al. teaches or suggests that the conductivity of a solid ink for use in thermal transfer ribbons or pressure-sensitive transfer ribbons is of any importance. Accordingly, Applicant remains of the position that one of ordinary skill in the art would not be motivated to combine the teachings of Takazawa et al. with the teachings of Tobias et al., and that even if these teachings were so combined, one of ordinary skill in the art would not be led to arrive at the instantly claimed invention.

In response to Applicant's position as set forth in the previous Amendment to the effect that Takazawa et al. viewed in

combination with Ball would not lead one of ordinary skill in the art to the present invention, the Examiner has stated that given that Ball is drawn to hot melt inks as are Takazawa et al. and the present claims, and further given that Ball teaches amounts of polystyrene typically used in hot melt inks to control adhesion of the ink to the substrate, a function especially relevant to both Takazawa et al. and the invention at hand, it is the Examiner's position that there is ample motivation to combine Takazawa et al. with Ball and thereby arrive at the claimed invention. Applicant disagrees with this position. As stated hereinabove, Takazawa et al. does not teach or suggest a hot melt or phase change ink of the composition recited in the instant claims; Ball fails to remedy this deficiency in the teachings of Takazawa et al. In addition, Takazawa et al. teaches solid inks for use in thermal transfer ribbons and pressure-sensitive transfer ribbons, while Ball teaches hot melt inks for use in ink jet printing. Those of ordinary skill in the ink arts would not be led to believe that one ingredient in one specific ink designed for use in ink jet printing should be taken and added to another specific ink designed for use in thermal transfer ribbons and pressure-sensitive transfer ribbons. Further, since the specific ink designed for use in thermal transfer ribbons and pressure-sensitive transfer ribbons (as disclosed in Takazawa et al.) does not resemble the inks recited in the instant claims, even if these references were viewed in combination, one of ordinary skill in the art would not be led to arrive at the instant invention.

In response to Applicant's position as set forth in the previous Amendment to the effect that Wickramanayake, Shawcross et al., Bruder et al., and JP 06228476 are drawn to liquid inks and thus there

is no motivation to combine these references with the solid ink reference of either Takazawa et al. or Breton et al., the Examiner has stated that given that it is well known in the art as found, for instance, in Malhotra et al. '492 that hot melt inks contain liquid vehicles and further given, as disclosed in Takazawa et al., that the ingredients for liquid inks and solid inks overlap, i.e. viscosity modifier, colorant, dispersant, etc., it is the Examiner's position that there is ample motivation to combine Wickramanayake, Shawcross et al., Bruder et al., and JP 06228476 with either Takazawa et al. or Breton et al. Applicants disagree with this position. While Malhotra et al. '492 teaches a solid ink composition that has a liquid component, nothing in this reference teaches or suggests that components present in liquid ink jet inks can or should be added to solid ink jet inks, or that desirable results will necessarily result therefrom. Similarly, while Takazawa et al. teaches that the colorant which is the subject thereof can be used in both liquid inks and in solid inks for thermal transfer ribbons and pressure-sensitive transfer ribbons, nothing in this reference teaches or suggests that components present in liquid ink jet inks can or should be added to solid ink jet inks, or that desirable results will necessarily result therefrom. Liquid ink jet inks and solid ink jet inks have different characteristics, different requirements, and different design difficulties; those of ordinary skill in the art would not be led to the conclusion that one specific component of one specific liquid ink should be taken and added to another specific solid ink, or that by so doing advantageous results would occur.

In response to Applicant's position as set forth in the previous Amendment regarding Malhotra et al. '117 and Yaegashi et al.,

the Examiner has stated that, given that 1-adamantane ethanol disclosed by Malhotra et al. '117, the dibenzofuran and 4-methylbiphenyl disclosed by Yaegashi et al., and the diphenyl carbonate and glutaric acid disclosed by Yaegashi et al. are identical to those presently claimed, it would have been obvious to one of ordinary skill in the art that the 1-adamantane, dibenzofuran, and 4-methylbiphenyl ethanol would intrinsically function as viscosity modifiers and that the diphenyl carbonate and glutaric acid would intrinsically function as dispersing agents. Applicant points out, however, that nothing in any of these references teach that these materials should be added to an ink composition as recited in claim 1 of the present application. Those of ordinary skill in the art would not be led to the conclusion that one specific component of one specific ink should arbitrarily be taken and added to another specific ink, or that by so doing advantageous results would occur. There would be no motivation for one of ordinary skill in the art to add these materials to an ink according to claim 1 of the present application. Further, since, as discussed hereinabove, Takazawa et al. fails to teach or suggest an ink according to claim 1 of the present application, even if these references were viewed in combination with Takazawa et al., one of ordinary skill in the art would not be led to arrive at the present invention as recited in claims 10 and 11.

In response to Applicant's position as set forth in the previous Amendment to the effect that Bruder et al. does not disclose the carboxamides recited in claim 15, the Examiner has stated that while Bruder et al. discloses preferred examples of carboxamides, nonpreferred disclosures can be used in assessing the patentability of

claims, and that the fact remains that the broad disclosure of carboxamides by Bruder et al. clearly encompasses the specific carboxamides presently claimed. Applicant disagrees with this position. There would be absolutely no motivation for one of ordinary skill in the art, upon reviewing Bruder et al., which is directed to liquid inks, to see that these inks liquid can contain carboxamides, choose some other specific carboxamides than those disclosed therein, and arbitrarily choose to put them in a hot melt or phase change ink.

In response to Applicant's position as set forth in the previous Amendment to the effect that Breton et al. '607 discloses a completely different composition from that claimed in the instant application in that it fails to teach either (a) a styrene polymer or terpene polymer hardening component, or (b) a nonpolymeric aromatic viscosity modifier, the Examiner has stated that it is agreed that Breton et al. '607 does not explicitly disclose the use of a styrene or terpene polymer or a viscosity modifier, which is why the reference is used in combination with Takazawa et al., Ball, and Fujioka which teach that components such as styrene polymers, terpene polymers, and viscosity modifiers are conventionally used in hot melt inks to provide the ink with properties such as adhesion, hardness, suitable viscosity, and the like, and that in light of these teachings, and further given that the ink of Breton et al. '607 is open to the inclusion of other ingredients since it uses "comprising" language, the combination of Breton et al. '607 with Takazawa et al., Ball, and Fujioka et al. is proper. Applicant disagrees with this position. The Examiner appears to have cited Breton et al. '607 solely because it has certain physical characteristics that are similar to those of the

instantly claimed inks. The possibility that one of ordinary skill in the art could look at Takazawa et al., Ball, and Fujioka et al. in combination, derive therefrom a composition similar to that recited in instant claim 1, and then conclude that this ink would have physical characteristics similar to those of the Breton et al. '607 ink, which has a completely different composition, is so slight as to be insignificant. Further, as discussed hereinabove and in the previous Amendment, since none of these references, viewed alone or in combination, teach or suggest an ink composition as recited in instant claim 1, even if these references were viewed in combination, one of ordinary skill in the art would not be led to arrive at the present invention.

The Examiner has, in this Office Action, newly cited Breton et al. '599 against claims 10 to 12, once in a rejection of claims 10 and 11 in combination with Takazawa et al., Yaegashi et al., Wickramanayake, and Malhotra et al. '117 and once in a rejection of claims 10 to 12 in combination with Breton et al. '607, Takazawa et al., Ball, Fujioka, Yaegashi et al., Wickramanayake, and Malhotra et al. '117. The Examiner has stated that Breton et al. '599, which is drawn to a hot melt ink, discloses the use of phenylsulfonyl compounds to adjust the viscosity of the ink.

Breton et al. '599 discloses an ink composition comprising (1) an azole compound, (2) a viscosity compound, (3) a lightfastness component, (4) an antioxidant, and (5) a colorant. The reference teaches that, in inks containing an azole compound, suitable viscosity compounds include (a) compounds containing one nitrogen in the cyclic ring, such as (1) 2-acetyl pyrrole; (2) 1-(2-aminophenyl)pyrrole; (3)

1-(phenylsulfonyl)pyrrole; (4) acetyl-1-(phenylsulfonyl)pyrrole; (5) methyl 5-(benzyloxycarbonyl)-2,4-dimethyl-3-pyrrole propionate; (6) ethyl 3,4-diethyl-5-methyl-2-pyrrole carboxylate; (7) 5-bromoindole; (8) methylindole; (9) 3-(2-bromoethyl)indole; (10) 5-chloro-2-methylindole; (11) (3-(dimethylamino methyl) indole); (12) indolyl acetate; (13) 5-methoxy-2-methyl indole; or (14) 1-(phenylsulfonyl)indole; (b) compounds containing two nitrogens in the cyclic ring, such as imidazoline derivatives such as (1) 2-methyl-2-imidazoline; (2) 2-benzyl-2-imidazoline; (3) 2-phenyl-2-imidazoline; (4) 1-ethyl-2-benzimidazolinone; (5) 1,3-diacetyl-2-imidazolidinone; or (6) 1-(p-tosyl)-3,4,4-trimethylimidazolidine; and (c) derivatives containing a nitrogen and a sulfur atom in the ring, such as thiazole compounds such as (1) 2-aminothiazole; (2) 2-amino-5-methylthiazole; (3) ethyl 2-amino-4-thiazole acetate; (4) ethyl 2-(formylamino)-4-thiazole acetate; (5) 2-amino-4-phenyl-5-tetradecylthiazole; (6) S-2-benzothiazolyl 2-amino- α -(methoxyimino)-4-thiazole thioacetate; (7) 1-aminobenzothiazole; or (8) 2-(methylsulfonyl) benzothiazole. Nothing in this reference teaches or suggests the use of 1,2-bis(phenylsulfonyl) ethylene, bis(phenylsulfonyl) methane, 1-bromomethyl-2-((phenylsulfonyl) methyl) benzene, or 2-(phenylsulfonyl)tetrahydropyran as viscosity modifiers in solid inks. Further, nothing in this reference teaches or suggests the addition of viscosity modifiers to ink compositions as recited in claim 1. Additionally, since, for the reasons stated hereinabove and in the previous Amendment, nothing in the other cited references teaches or suggests an ink composition as recited in claim 1, even if these reference were viewed in combination, one of ordinary skill in the art would not be led to arrive at

an ink composition as recited in instant claims 10 to 12. Accordingly, Applicant is of the position that the present invention as recited in claims 10, 11, and 12 is patentable with respect to the teachings of these references.

As the Court of Appeals for the Federal Circuit recently stated in Yamanouchi Pharmaceutical Co. v. Danbury Pharmacal Inc., 56 USPQ2d, 1641 (Fed. Cir. 2000) at 1644:

This court has recently reemphasized the importance of the motivation to combine:

As this court has stated, "virtually all (inventions) are combinations of old elements." Therefore, an examiner (or accused infringer) may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner (or accused infringer) to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention.

....

...To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.

In re Rouffet, 149 F.3d 1350, 1357-58, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998) (internal citations omitted).

For the instant application, the Examiner also appears to have attempted to use the claimed invention as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. This method is clearly impermissible. Nothing in any

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of the cited references teaches or suggests the combination of elements recited in the instant claims.

Applicant believes that the foregoing distinctions place the claims in condition for allowance, and accordingly respectfully requests reconsideration and withdrawal of all grounds for rejection.

In the event the Examiner considers personal contact advantageous to the disposition of this case, she is hereby authorized to call Applicant(s) attorney, Judith L. Byorick, at Telephone Number (716) 423-4564, Rochester, New York.

Respectfully submitted,



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January 3, 2001
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